

SILICON N-P-N TRANSISTOR

2N4936

ELECTRICAL CHARACTERISTICS, At Ambient Temperature (T_A) of 25°

CHARACTERISTIC	Symbol	TEST CONDITIONS					LIMITS			UNITS
		Frequency f	DC Collector- to-Base Voltage VCB	DC Collector- to-Emitter Voltage VCE	DC Emitter Current I_E	DC Collector Current I_C	Type 2N4936			
		MHz	V	V	mA	mA	Min.	Typ.	Max.	
Collector-Cutoff Current	I_{CBO}	-	15	-	0	-	-	-	10	nA
Collector-to-Base Breakdown Voltage	BV_{CBO}	-	-	-	0	0.001	50	-	-	V
Collector-to-Emitter Breakdown Voltage	BV_{CEO}	-	-	-	$I_B=0$	1	40	-	-	V
Emitter-to-Base Breakdown Voltage	BV_{EBO}	-	-	-	-0.001	0	3	-	-	V
DC Forward Current- Transfer Ratio	h_{FE}	-	-	8	-	2	60	-	250	-
Magnitude of Small- Signal Forward Current- Transfer Ratio	$ h_{fe} ^a$	1 kHz 100 MHz	- -	8 8	- -	2 2	70 7	- -	280 16	-
Collector-to-Base Feedback Capacitance	C_{cb}^b	0.1 to 1	8	-	0	-	-	0.2	0.25	pF
Collector-to-Base Time Constant	$r_b' C_c^a$	31.9	8	-	-2	-	1	-	6	ps
Small-Signal, Common- Emitter Power Gain in Unneutralized Amplifier Circuit (See Figs. 1 and 4)	G_{pe}^a	200 450	- -	8 8	- -	2 2	- 13	- -	- 18	dB
Small-Signal, Common- Emitter Power Gain in Neutralized Amplifier Circuit	G_{pe}^a	450	-	8	-	2	-	20	-	dB
Measured Noise Figure	NF^a	200 See Figs. 1 and 2	$R_S =$ $200 \Omega^c$	8	-	2	-	-	-	dB
		450 See Figs. 3 and 4	$R_S =$ $100 \Omega^c$	8	-	2	-	-	4.5	

^a Lead No. 4 (case) grounded.

^b Three-terminal measurement: Lead No. 2 (emitter) and lead No. 4 (case) connected to guard terminal.

^c R_S (Source Resistance) is the resistance looking back from the base terminal toward the generator input.

